Atty. Dkt. No.: 054821-0865

WHAT IS CLAIMED IS:

- 1 1. A method for determining the amount of charge which can 2 be drawn from a storage battery comprising:
- determining a battery voltage profile and a battery current profile over at least one time interval;
- smoothing the battery voltage profile and the battery current profile using at least two different smoothing measures;
- determining voltage differences between the battery voltage
 profile smoothed using a second smoothing measure and the battery
 voltage profile smoothed using a third smoothing measure, with the third
 smoothing measure producing greater smoothing than the second
 smoothing measure;
 - determining current differences between the battery current profile smoothed using a second smoothing measure and the battery current profile smoothed using a third smoothing measure, with the third smoothing measure producing greater smoothing than the second smoothing measure;
 - calculating characteristic values from quotients of the voltage differences and the current differences;
- utilizing the characteristic values for a time interval to
 determine an interval characteristic value; and
- determining of the amount of charge which can be drawn from the storage battery from at least one interval characteristic value for at least one time interval.
- The method of Claim 1 wherein the smoothing is carried out by filtering with different time constants, with a second time constant as a second smoothing measure being greater than a third time constant as a third smoothing measure.

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Atty. Dkt. No.: 054821-0865

1 3. The method of Claim 1 wherein the smoothing is at least 2 partially carried out by averaging.

- The method of Claim 1 further comprising utilizing a mean value of the characteristic values of a time interval in order to calculate the interval characteristic value for the time interval.
- 5. The method of Claim 1 wherein the characteristic values are used for determination of the interval characteristic value only when the magnitude of the current difference is less than a defined second limit value.
- 1 6. The method of Claim 5 wherein the second limit value is in 2 the region of the 30-hour to 80-hour current of the storage battery.
 - 7. The method of Claim 5 wherein the second limit value corresponds approximately to the 50-hour current of the storage battery.
 - 8. The method of Claim 5 wherein the characteristic values are used for determination of the interval characteristic value only when the magnitude of the current difference of the battery current smoothed using the second smoothing measure and of the battery current smoothed using a first smoothing measure is less than a defined first limit value, with the first smoothing measure producing greater smoothing than the second smoothing measure.
 - 9. The method of Claim 8 wherein the first limit value is in the region of the 30-hour to 80-hour current of the storage battery.
- 1 10. The method of Claim 8 wherein the first limit value 2 corresponds approximately to the 50-hour current of the storage battery.

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Atty. Dkt. No.: 054821-0865

- 1 11. The method of Claim 1 wherein the characteristic values are
 used for determination of the interval characteristic value only when the
 battery currents smoothed using the second smoothing measure are
 greater than a third limit value and are less than a fourth limit value.
 - 12. The method of Claim 11 wherein the third limit value is approximately the 10-hour current and the fourth limit value is approximately the 30-hour current of the storage battery.
- 13. The method of Claim 1 further comprising integrating
 permissible characteristic values in a time interval to calculate an
 integrated characteristic value for the time interval, integrating the times
 in which permissible characteristic values are present to determine a time
 period for the time interval and to calculate the interval characteristic
 value as the quotient of the integrated characteristic value of the time
 interval and the time period.
 - 14. The method of Claim 13 further comprising weighting the interval characteristic values as a function of a state of operation of the storage battery.
 - 15. The method of Claim 1 further comprising determining the amount of charge which can be drawn from the storage battery from at least one interval characteristic value as a function of a state of operation of the storage battery.
 - 16. The method of Claim 15 further comprising determining the amount of charge which can be drawn from the storage battery from at least one interval characteristic value as a function of at least one of the state of charge of the storage battery and the battery temperature.

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17. The method of Claim 14 wherein the relationship between
the amount of charge which can be drawn and the interval characteristic
values, the state of charge and the battery temperature are described
using families of characteristics which are determined empirically or by
calculation.

18. The method of Claim 1 further comprising:

learning a family of characteristics to determine new state interval characteristic values for a storage battery in a new state as a function of states of charge and battery temperatures;

calculating a measure coefficient from an interval
characteristic value for a determined state of charge and a determined
battery temperature and from the new state interval characteristic value
for the state of charge and the battery temperature; and
determining the amount of charge which can be drawn from
the storage battery as a function of the measure coefficient, the state of

19. The method of Claim 18 wherein the measure coefficient is the difference between the interval characteristic value and the new state interval characteristic value.

charge, and the battery temperature.

- 20. The method of Claim 18 wherein the measure coefficient is the ratio of the interval characteristic value and the new state interval characteristic value.
- 21. A monitoring device for a storage battery comprising:
 a measurement component for measuring battery voltages
 and battery currents; and
 an evaluation component, wherein the evaluation component
 is designed to carry out a method comprising:

6	determining a battery voltage profile and a battery current
7	profile over at least one time interval;
8	smoothing the battery voltage profile and the battery current
9	profile using at least two different smoothing measures;
10	determining voltage differences between the battery voltage
11	profile smoothed using a second smoothing measure and the battery
12	voltage profile smoothed using a third smoothing measure, with the third
13	smoothing measure producing greater smoothing than the second
14	smoothing measure;
15	determining current differences between the battery current
16	profile smoothed using a second smoothing measure and the battery
17	current profile smoothed using a third smoothing measure, with the third
18	smoothing measure producing greater smoothing than the second
19	smoothing measure;
20	calculating characteristic values from quotients of the
21	voltage differences and the current differences;
22	utilizing the characteristic values for a time interval to
23	determine an interval characteristic value; and
24	determining of the amount of charge which can be drawn
25	from the storage battery from at least one interval characteristic value for
26	at least one time interval.